Amendments to the Claims

This listing of claims will replace all prior versions, and listings, of the claims:

1. (withdrawn) A method of fabricating an optical cross connect, comprising:

a) providing a first board having *m* optical path(s);

b) providing a second board having *n* of optical path(s); and

c) providing an optical switch array comprising a plurality of optical switches, wherein the optical switches permit optically coupling any optical path of the first board with any optical path of the second board.

2. (withdrawn) The method of claim 1 wherein the optical switch array is disposed between the first and second boards, wherein the first and second boards are arranged so that each of the *m* optical paths crosses each of the *n* optical paths.

3. (withdrawn) The method of claim 1 wherein the optical switch array comprises liquid crystal switches.

4. (withdrawn) The method of claim 1 wherein at least one of the first and second boards is a planar layer.

5. (withdrawn) The method of claim 4 wherein at least one selected optical path is formed by:

i) creating a channel within the planar layer; and

ii) forming at least a portion of the selected optical path within the channel.

6. (withdrawn) The method of claim 5 wherein step i) further comprises creating the channel using a selected one of a chemical, mechanical, and a thermal process to remove planar layer material.

7. (withdrawn) The method of claim 5 wherein step i) comprises molding the planar layer with the channel.

8. (withdrawn) The method of claim 5 wherein step i) further comprises:

1) lithographically defining a location of the selected optical path on a face of the planar layer; and

2) etching the planar layer along the defined location of the selected optical path to create the channel.

9. (withdrawn) The method of claim 5 wherein step ii) further comprises filling the channel with an optical core medium.

10. (withdrawn) The method of claim 5 wherein step ii) further comprises:

1 depositing a first cladding portion within the channel; and

2. depositing an optical core medium within the channel; and

3. depositing a second cladding portion over the optical core medium.

11. (withdrawn) The method of claim 10 wherein one of the first and second cladding portions has an index of refraction less than an optical core medium index of refraction.

12. (withdrawn) The method of claim 10 wherein at least one of the first and second cladding portions is optically reflective along a side adjacent the optical core medium.

13. (withdrawn) The method of claim 5 further comprising:

iii. depositing a cladding portion within the channel; and

iv. depositing an optical core medium within the channel.

14. (withdrawn) The method of claim 13 wherein the cladding portion has an index of refraction less than an optical core medium index of refraction.

15. (withdrawn) The method of claim 13 wherein the cladding portion is optically reflective along a side adjacent the optical core medium.

16. (withdrawn) The method of claim 5 wherein the planar layer is a selected one of a conductor, nonconductor, and semiconductor layer.

17. (withdrawn) The method of claim 5 wherein walls of the channel have a lower index of refraction than that of the optical core medium.

18. (withdrawn) The method of claim 5 wherein the selected optical path is substantially non-cylindrical.

19. (withdrawn) The method of claim 5, further comprising:

c) forming an electrical trace supported by the planar layer.

20. (currently amended) An optical cross connect apparatus, comprising:

a first planar layer comprising *m* optical path(s);

a second planar layer comprising *n* optical path(s); and

an optical switch array comprising a plurality of optical switches, wherein the optical switches permit optically coupling any optical path of the first planar layer with any optical path of the second planar layer, and control signals communicate to the optical switches to change the optical switches between a transparent state that permits signal transmission and an opaque state that prevents signal transmission.

21. (previously presented) The apparatus of claim 20 wherein the first and second planar layers are arranged so that each of the *m* optical paths crosses each of the *n* optical paths to form a plurality ($m \bullet n$) of crossing points.

22. (original) The apparatus of claim 21 wherein the optical switch array is disposed between the first and second planar layers so that each optical switch is located at an associated crossing point between the first and second planar layers.

23. (original) The apparatus of claim 20 wherein the optical switch array is a liquid crystal optical switch array.

24. (original) The apparatus of claim 20 wherein at least one selected optical path is formed within a selected layer of the first and second layers.

25. (original) The apparatus of claim 24 wherein the selected layer further comprises a channel, wherein the selected optical path is disposed within the channel.

26. (original) The apparatus of claim 25 further comprising a first reflective cladding portion deposited within the channel.

27. (original) The apparatus of claim 25 further comprising an optical core medium disposed within the channel.

28. (original) The apparatus of claim 27 further comprising a reflective cladding portion disposed over the optical core medium.

29. (original) The apparatus of claim 26 further comprising a second reflective cladding portion disposed over the channel.

30. (original) The apparatus of claim 25 wherein a cross-section perpendicular to the route of the selected optical path is substantially non-circular.